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CORN STALKS.

A question is sometimes suggested by the different styles of treating our field fodder, as the stalks are frequently termed, after the tops are cut, the blades stripped, and the ears gathered out of the shuck. Some fence their stacks, and at once turn their stock upon them. Others cut them, and feed them in open pounds, rarely in stables. A few make no use of them, but let them decay where they are raised.

Some make no better use of their wheat and oat straw, using them only for bedding, conceiving that they are of little value either as food or manure.

In these instances they are very seriously mistaken. If the corn stalks are cut and split up into small pieces, and the straws cut up fine, so that the stock can chew them easily, their value as food and manure will speedily appear.

To place these things squarely before the farmer, the following analyses of the three from the 10th Report of the New Jersey State Agricultural Experiment Station are worthy of very careful consideration.

FIELD CORN STALKS, PER TON.

Food Constituents.		*Fertilizing Constituents.*	
Fat.....	17 lbs.	Nitrogen..	17. 7 lbs.
Protein....	60 "	Ph. Acid..	5.20 "
N free ex. and fibre.	1076 "	Potash	20.40 "

WHEAT STRAW.

Fat.....	8.20 lbs.	Nitrogen.	10.20 lbs.
Protein	13.00 "	Ph. Acid.	1 80 "
N. free ex. and fibre.	767 "	Potash ..	14.80 "

OAT STRAW.

Fat	12.80 lbs.	Nitrogen..	13.00 lbs.
Protein ..	30.60 "	Ph. Acid..	4.40 "
N. free ex. and fibre...	818.60 "	Potash....	24.40 "

RYE STRAW.

Fat.....	8.00 lbs.	Nitrogen..	10.00 lbs.
Protein...	15.60 "	Ph. Acid..	5.80 "
N. free ex. and fibre..	998.40 "	Potash....	15.80 "

When we recall that all of these substances are reduced to the same degree of fineness before analysis, and that the outer covering of the corn stalk is larger and harder, if not tougher, than the straw, we see why it is not as available as food in itt natural state.

From the very complete report on the corn plant in the Missouri Bulletin, No. 9, we get its value:

OUTSIDE.

Fat.....	12 lbs.	Carbhy..	1010.00 lbs.
Fibre.....	88 "	Ph.Acid.	60 "
Proteine.....	98 "	Potash..	176 "

PITH.

Fat.....	20 lbs.	Carbhy....	1300 lbs.
Fibre	420 "	Ph. Acid ..	40 "
Protein.....	90 "	Potash	96 "

In Vermont, where the question of their value for eating purposes was fairly tried, the nutritive ration of corn stover butts to corn stover tops was as 5.30 to 5.28 in one trial and 5.06 to 5.31 in another. The fat in the milk given by the cows to which it was fed stood at 8.63 lbs to 8.05 lbs. in one cow; 11.46 lbs to 11.03 lbs in the other, in favor of the butts; although the corn in the last trial gave nearly 10 lbs. more milk during it.

If we assume, with the S. Carolina Bulletin No. 8, for March, 1890, that the weight of the entire corn plant grown on an acre is 4,132 lbs., that of the stalks 980 lbs., and of the leaves 683 lbs., then as nutrients their value stood as follows.

	Leaves :	Stalks :
Crude Ash.....	68	98
" Protein.....	69	26
Fat	10	13
Fibre.....	164	312
Nit. Free Ex.....	309	487

Now it has been seen that the butts and tops of stalks are equal in value pound for pound, and as we know the butts to weigh two or three times as much as the tops, our loss in not using the stalks is manifest. To this we add that cow manure is best for light sands, as it will not burn, for stalks if at all are exclusively fed to cattle.

Evidently when the value of all manures depends directly on the food of the animal, rich food, rich manure, and the converse. When farmers must practice economy to make up for previous low prices and poor crops, even if the future ones are good, that is extremely doubtful, as lands have been run down from inability to fertilize as we should. Whatever will help us to recover lost ground should be done and the use of all our corn stalks is one.

A. E. A.

PHOSPHORIC ACID.

Wheat and corn take about the same quantities of phosphoricic acid and potash for equal yields per acre of a crop. Yet in twelve brands of fertilizer, whose analyses are to be found on p.7 of the special Bulletin of our Experiment Station, the difference was 8.11 per cent., equivalent to 160 pounds of phosphoric acid per ton, and worth at the valuation price set by the Experiment Station, $6.90. Nor is this all, for in addition there is 1.47 per cent insoluble acid that we can not, and nature does not, render available as plant food, $1.68 more to be added for what we have no use; or about one-forth added to the cost and the same for freight and hauling.

But the injury does not stop here. Applied out of proper proportion it "causes the crop to eat up too soon the nitrogen and then causes the plant to die before its time." So says Prof. Wagner, the great German authority on commercial fertilizers after advising farmers to deposit in soil such a surplus of phosphoric acid and potash so that plants that had been unable from unfavorable atmospheric conditions to do so gradually could do it in a few days. Every farmer has seen it, when a deficiency of rain has left the roots for a week or two without dissolved food they soon take it up in extra quantities after a good rain and grow correspondingly fast. Undue nutrition of one part followed by corresponding growth invariably dwarfs another producing an irregularly developed plant or animal.

In this view it would be wiser, safer, and more economical to purchase your chemicals yourselves, and compound them to suit the crop and soil of your own. We have seen not a little of this "premature dying" from phosphoric acid, attributing it to the *wrong cause*, want of nitrogen, which was there but had been prematurely *burnt up* by the phosphoric acid.

A.

ASHES.

When we use manures or fertilizers on our lands, and to produce crops, two questions present themselves: Has the land not enough of all the substances required to make a crop of the kind proposed? and if not, then in what is it deficient? For it is useless to supply what is not needed. Mr. Crosby in his wheat article in Messrs. Powell & Co.'s pamphlet on wheat, is proof of this fact.

Very many regard ashes as the very best manure that can be used, but seem not to appreciate the fact of the difference in their composition.

The bulletin of the Massachusetts State Experiment Station are full of it. To draw attention to this difference, and for another purpose to be developed further on, we give two tables of the composition of ashes—one rich, the other poor, in potash, for which they are generally applied.

In Bulletin No. 31, for 1888, we have some analysis of which we give highest and lowest:

	PER CENT.
Moisture 212° F.....	2.76
Phosphoric Acid.....	3.09
Magnesium Oxide.....	2.84
Calcium.....	32.03
Potassium.....	10.24

	PER CENT.
Moisture 212° F.....	19.14
Phosphoric Acid.....	1.72
Magnesium Oxide.....	3.04
Calcium.....	30,16
Potassium.....	4.76

Now should the crop need potash chiefly, the last might not pay to use, or if the land had enough. Should the crop or the land or both need phosphric acid, the former might give good results. In another instance four lots of ashes differed 1.57 per cent. in potash, and .89 in phosphric acids. These analysis suggest that if potash alone was desired, would not muriate of potash containing 49.68 per cent. been the cheaper? If phosphoric acid, then ground bones containing nearly 27 per cent., although some are as low as 18 per cent., would have been the cheaper? Again, in August, 1890, six more samples analyzed showed a difference in potash of 6.53 per cent. and in phosphoric acid of 1.52 per cent. In May twelve samples differed 6.48 per cent. in potash and 2.31 per cent. in phosphoric acid, quite enough to change a result from profit to loss.

If, however, we would change, cotton seed hull ashes are far richer in potash and phosphoric acid than wood, but unfortunately differ as much if not more in composition. In three analysis the potash varied from 30 to 9.91, or 20.9 per cent; the phosphoric acid 8.79, and, out of 23 analysis, the average of potash was only 23.80 per cent.; and of 116 of wood ashes, 5.25 per cent. Phosphoric acid 8.50, wood ashes 1.75. For phosphoric alone, S. C. rock has 28 per cent. Then for the potash and phosphoric acid, nitrite of potash and S. C. phosphate rock would have been a good combination to apply.

X.

OUR BLACK SOILS—THE NITROGEN QUESTION.

The attempt of Prof. Massey to place the origin of the black gum soils and of the uplands of Wicomico on the same basis is a very strange one, utterly unsupported by facts. The upland soils are the result of the degradation of rock by atmospheric agencies. The gum soils are the result of the decay and putrefaction of organic substances, as

leaves and twigs of trees, and of vegetable growths of organic origin. As such they cannot possibly have the same composition, nor grow the same cereals.

Wherever wheat grows kindly the clovers will; but whoever heard of their success as a hay crop on these gum soils?

Now a word as to the nitrogen question. The highest authority on this subject in this country says, "There is, I think, no evidence that the corn plant obtains a large amount of nitrogen directly from the air through its leaves or roots. Neither is there any (*absolute*) proof that it does not." The proof that micro-organisms cause the roots of plants to assimilate nitrogen is *unsettled*, not proven. x.

CLOVER AS A NITROGEN CATCHER.

Green manuring is practiced in order to add something to the soil. The ashes, the mineral elements of the plants, are derived entirely from the soil, so that when we plow under a green crop the land will be no richer in potash or phosphoric acid than before, but these elements can be in a condition more available for plant food. Some plants have a better digestion than others, while deep-rooted plants can get some food by reclaiming the fertility which has been washed into the sub-soil, out of the reach of ordinary plants. Again organic matter is added to the soil when the crop is plowed under, quite a little of which has been derived from the atmosphere. Another benefit is that the humus, vegetable matter, which gives to the soil its dark color, makes clay soil more crumbly and gives sandy soil more body, besides making the soil warmer snd lighter and admitting the air. It is also a source of carbonic acid gas, which acts to make available the plant food already in the soil. So important is this carbonic acid gas that by its presence we judge of the productive power of the land.

But the most important effect of turning under a green crop is the addition of nitrogen, a very precious plant food. It is used in larger quantities by plants than any other element, and it is the only constituent liable to be lost by leaching or by escaping into the air, thus making it more costly. It has been shown lately that certain plants have the power of using the free nitrogen of the air and converting it into vegetable substance and so affording available plant food for other plants. It is then evident that the best plant for green manuring is one that has long roots to pump up the lowest fertility from the subsoil and has a bulky root and which will add a large quantity of humus to the soil. Also one that gathers nitrogen from the air. Clover answers these requirements perfectly, as does the pea, except that it has short roots. Buckwheat and rye, so universally used for green manuring, do not have the power of using the free nitrogen of the air, nor do they have long roots and are therefore not desirable.

It has also been discovered that the more numerous are the swelling-like modules on the roots of peas and clover, the greater the activity of the plant in taking free nitrogen from the air. Further, it is known that the modules are caused by bacteria, which are found in every arable soil. These bacteria also aid the plant by assisting in the decomposing of vegetable matter in the soil and the transforming of nitrogen into nitrates, which is the best form of nitrogen for plant food. It is important then that we encourage the multiplication of these bacteria by supplying favorable conditions, which are first, free access to air, because they use oxygen and the soil should also be well drained, as air and water cannot occupy the same space; second, warmth, therefore plow under the crop when there will be three or four weeks of warm weather for the bacteria to work in; third, plow shallow, so as not to exclude the air, and last, keep the surface harrowed so as to retain the moisture. Green manuring should also be accompanied by the use of mineral fertilizers unless the soil is especially rich in the latter.—*Dr. G. C. Caldwell, Cornell University.*

PROFITABLE EASTERN SHORE TRUCKING.

We publish below the sworn statement of one of our leading truckmen, as to his operations for the year 1890 on his truck farm on the Manokin river. It illustrates forcibly and convincingly what can be done on a small truck farm less than 50 acres in the way of making not only a living but money. And it demonstrates what this climate and soil is worth as a trucking country. In fact the place contains in all 49¼ acres. Of this, less than 35 acres are arable, the balance being woodland, marsh, hillsides and glades. From these less than 35 acres there were shipped in 1890 and sold as follows:

Asparagus, 2,969 bunches; net returns from market. $728,08. Expense for packages, $11 52; net proceeds	$ 716 56
Lilacs, 356 bunches; net returns, $7 15; packages, .32; net proceeds	6 83
Peas, 44 barrels, 410 baskets; net returns, $486 54; picking, $152.-16; seed, $50 50; packages, $62 39; net proceeds	121 55
Strawberries, 3,674 quarts; net returns, $242 50; picking, $79 48; net proceeds	163 02
Cabbage, 27 barrels; plants, 7,900, net returns, $99 70; packages, $4 32; net proceeds	95 38
Tomatoes, 461 boxes, carries, 482; plants, 4,800; net returns, $1,035; packages, $142 92; net proceeds	892 08
Cantaloupes, 95 boxes, 64 barrels, 852 carries net returns, $ 1 515 95, packages, $205 38; net proceeds	1,310 67
Raspberries, 660 quarts, net returns, $46 36, picking, $13 20; net proceeds	33 16
Apples, 14 boxes, 1 barrel, net returns, $10 77; packages, $1 28; net proceeds	9 49
Cherries, 41 quarts, net returns, $3 02; picking, 62c; net proceeds	2 40
Beans, 4 boxes, 19 baskets, net returns, $17 07; picking, $4 75; seed, $3 50; packages, $2 47, net proceeds	6 35
Watermelons, 300; net proceeds	$26 96
Eggs and poultry, net proceeds	135 00
Hogs, 3, weighing 675 pounds	40 50
Pigs, 26, net proceeds	63 08
The sum total net proceeds from sales makes	$3,623 03

The general expenses for 1890, outside special items named above, were $400, and there were $95 spent for commercial fertilizers; total general expenses $495. The seeds, not included in above expenses and re ceips. were saved at little or no expense, and manures used, not listed above, were raised on the farm, and their application is included in the general labor expenses. The total net proceeds for the year sum up to a handsome reveune of $3,128 03.

This trucker who did this is Mr. Charles E. Wooster, and he has sworn to its correctness before Herbert F. Waters, a well-known justice of the peace of Somerset county. This statement is an unquestionable illustration of what intelligent management of a small farm in Somerset county will return to its owner in a year. And it must be also remembered that the year 1890 was about as unfavorble a farming year as we generally experience.—*Princess Anne Marylander.*

NITROGEN.

He was a very plain farmer, but not painfully plain, with the commonest of common sense, that when falling in love with Dame Nature and tramping over her rough and rugged domain, kept his head clear and his feet steady. Feeling the importance of being one of the sixty millions or more that own and control this great nation, he keeps on the lookout for things going wrong and is ready to lend a hand to put them right. He would not object to putting up pipes in the air instead of down in the earth (when the plumbers get their charges under control) to draw down the nitrogen or water to grow crops, having a spigot to regulate the quantity, but is decidedly opposed to sending up balloons with dynamite bombs and exploding them to bring it down in unknown quantities. Besides the danger to our dear departed relatives and friends, that some preachers say are continually hovering around us in space without consulting a medium, (although their reputation is not as reliable as it was.)

Then again there is a difference of opinion about nitrogen in the air for the use of crops, and it is hard to keep it in the soil owing to its teaching qualities. Until these questions are settled the man with the balloon and dynamite ought to be tied back. Finally Jupiter might take offence and retaliate by turning his thunderbolts on us. War with heaven is too big a thing to contemplate, having heard the artillery of heaven booming and seen the effects of the shots. It looks decidedly squally, and then you know there are so many of us trying to get there, that it might interfere with our calculations. There is lots of stuff to be found on the earth yet to make crops grow without going to the heavens after it.

JON E. CAKE.

LIVE STOCK.

WATERING HORSES.

It is generally held, at least in practice, that any water that stock can be induced to drink is sufficiently pure for their use. This practice occasions losses that would startle us if statistice were at hand. Water that is impure from the presence of decomposing organic matter, such as is found in wells and ponds in close proximity to manure heaps and cess-pools, is frequently the cause of diarrhœa, dysentery and many other diseases of stock, while water that is impregnated with different poisons and contaminated with specific media of contagion produces death in many instances.

Considering first the quantity of water required by the horse it may be stated that when our animals have access to water continually they never drink to excess. Were the horse subjected to ship voyages or any other circumstances where he must depend upon his attendant for the supply of water, it may be roughly stated that each horse requires a daily average of about eight gallons of water. This will vary upon the character of his food somewhat; if upon green food less water will be needed than when fed upon dry food and grain.

The time of giving water should be carefully studied. At rest the horse should receive water at least three times a day; when at work, more frequently. The rule here should be to give in small quantities and often. There is a popular fallacy that if a horse is warm he should not be allowed to drink, many claiming that the first swallow of water founders the animal or produces colic. This is erroneous. No matter how warm a horse may be it is always entirely safe to allow him six to ten swallows of water. If this is given on going into the stable he should be given at once a pound or two of hay and allowed to rest about an hour before feeding. If water be now offered him it will, in many cases, be refused, or at least he will drink but sparingly. The danger, then, is not in the first swallow of water, but is due to the excessive quantity that the animal will take when warm if not restrained.

Water should not be given to horses when it is ice-cold. It may not be necessary to add hot water, but we should be careful in placing water troughs about our barns to have them in such a position that the sun may shine upon them during the winter mornings. Water, even though it be thus cold, seldom produces serious trouble if the horse has not been deprived for too great a length of time.—*Diseases of the Horse.*

CHEMICAL HORN KILLERS.

Caustic potash for checking horn growth on calves seems to be fully as effectual as any of the fluids put up for that purpose, and is cheaper and more readily applied. The potash may be obtained at any drug store; it comes in sticks about the size of a lead pencil, and five cents' worth will suffice for fifteen or twenty calves. The work, to be the most effectual and satisfactory, should be done as soon as as the little buttons can be definitely located on the calf's head; say from three days to two weeks of age. Clip the hair away from the embryo horn with a pair of scissors, then with the tip of the finger moisten with water the horn that is to be operated on first. Care must be exercised not to let any drops of water run down the calf's head from the horn, for if it does, the dissolved potash will follow the same channel and cause unnecessary suffering. After moistening the littlle horn button, take a stick of the potash and wrap a piece of paper around it, leaving a half-inch of the lower end exposed. The purpose of the paper is to prevent the fingers coming in direct contact with the potash. Hold the stick to the hand as one would a pencil, and rub it all over and around the base of the embryo horn; keep the horn moistened while the potash is being used. As soon as the skin begins to soften up and peel off the horn, and it commences to look red, as though the blood was starting through, it is enough, and the other horn may then be treated in a like manner. I have never, in my experience, found a second application necessary. Whatever potash may be left after the work is performed should be corked up air-tight in a bottle, so that the moisture in the air will not dissolve it.—*Breeder and Sportsman.*

THE PIG.

Prof. Stewart calls attention to the comparative structures of the stomach and intestines of live stock, and gives the following as the comparative weight of these to the body of the animal named.

	Stomach. Per cent.	Intestines. Per cent.
Of the ox.....	11½	2¾
Of the sheep.....	7½	3½
Of the pig.....	1¼	6½

Commenting on these figures he says: These differences have an important relation to the feeding and nutrition of the animal. The pig having so small a stomach, necessarily lives upon concentrated food, taken in frequent meals, while, having so extensive an intestinal canal, its digestive functions are very active, and a large quantity of food can be disposed of. This peculiarity of its physiology has also an effect upon its habits, and this in turn explains to a large extent its peculiar position. When feeding at large it is continually seeking food, which, passing through its small stomach, is rapidly digested, almost as it is eaten; while kept in confinement it gorges itself to fullness and then sleeps while the food is being digested, and, as the digestion is rapid, the appetite is quickly excited again and the stomach calls for more food. This with frequent eating and active digestion, and resting meanwhile, the pig is able to take on more flesh and make more fat than any other animal during the usual fattening process, and when in growth it makes more proportionate weight. But this peculiarity tends greatly to disease, and thus the pig is most frequently injured by over-feeding, and its intestines are more subject to inflammatory disorders. It consequently suffers more than any other animal from intestinal and pulmonary fever of which the two forms of so-called cholera are prevailing types. Its appetite is also unduly excited by the greater demands of the digestive apparatus upon the supplying organ, the stomach, and hence its excessive greediness is to be restrained by judicious feeding.

The ability of the pig to take on growth would be amazing were this peculiar functional peculiarity understood. Four hundred pounds of corn meal and bran will make one hundred pounds of live weight in a pig, but 1,548 pounds of clover hay and oil meal is necessary to make the same weight of mutton, and the increase of weight of the pig is made in the least time. It has been supposed that the larger and more powerful assimilating organs of the pig explained this larger gain from food. But accurate investigation has led to the belief that it is due more to the habit of the animal to eat its food quickly, to gorge the stomach in fact, and then to rest and sleep while the rapid digestion (due to the more extensive intestinal canal) quickly disposes of the food without the waste which occurs when an animal is in motion of any kind and using up food for the sustenance of the various organs; less food in fact is used up in maintenance, and more is consequently disposed of in growth. The habit, too, of laying up a large amount of fat under the skin, thus preventing waste of heat from the body, is another fact which goes to explain this, for very little food is expended in maintaining the vital heat, so that the starch and other carbo-hydrates of the fats of the food are stored in the body instead of being expended in mere maintenance.—*W. Rural.*

CLOVER FOR HOGS.

Very recently much attention has been given to the subject of clover and its fattening qualities for hogs. It is a well-known fact that clover is a good food for hogs, but when one says that an acre of clover will produce more pounds of pork than an acre of any other crop, we consider the statement rather extravagant. By recent tests, of which we are informed, we believe that the proposition that an acre of clover will produce more pounds of meat than an equal area of corn is true. The average yield of shelled corn per acre is not more than 50 bushels, and twelve pounds of pork per bushel of corn is usually considered a good and, in fact, more than an average production. This would make the highest possible average only 600 pounds per acre. An acre of clover will pasture from eight to ten hogs through the entire summer and fall. By numerous tests it has been proven that a hog weighing from 75 to 100 pounds will double its weight by fall with no other food than the clover pasture. This means from 800 to 1,000 pounds of pork made from clover compared with 600 pounds of corn.

Whether it is best to feed some corn while the hogs are running on good clover or grass pasture is a question that is yet undecided. Some favor giving a small feed, while others favor giving no corn. Many tests have been made, and yet this question is not fully decided.

It is best not to let the clover get too large, as the hogs like it best when it is young and tender. If they are turned in too late, the clover will outgrow them and remain too old to suit them all through the season.—*Farmers' Home Journal.*

SMALL YORKSHIRE SWINE.

The breed of swine known in America as Small Yorkshire is of English origin. Until within very recent years there was much confusion and uncertainty regarding the names of English breeds of swine. The great improvement in swine breeding which began in Englnnd about one hundred years ago was zealously prosecuted by the introduction of Chinese and other breeds, as well as by careful selection and crossing. The result was an almost infinite variety of breeds—black, white, red, and variously spotted, but all of them greatly superior to the coarse, flat-sided, long-legged, large-boned grunters of former centuries. Youatt and Martin, writing in 1847, describe six breeds of white swine, and twenty-three breeds of other colors. Still later other white breeds came in. At length the National Pig Breeders' Association was organized in Great Britain and it soon placed the matter of nomenclature upon an intelligent basis. The white breeds were reduced to three, known respectively as Large Whites, Middle Whites and Small Whites. The American Chester Whites, Cheshires and Victorias all have points in common with the Large Whites of England; our Suffolks are similar to the Middle Whites; and the small Yorkshire is identical with the Small White of the British Association. The last named breed possess qualities which eminently fit it for filling the position of what may perhaps be called the family pig. With its chunky frame and pug nose it is not built for "rustling." Indeed, if reduced to the alternative of "root hog or die," one of them could hardly be expected to long maintain the struggle for existence. But with comfortable quarters and the smallest reasonable amount of suitable food, it leads a life of serene and luxurious content, stretching out and waxing fat from day to day, until the grand transformation scene reduces it to delicate, thin-skinned rashers, savory hams and succulent spareribs. The Small Yorkshire is peculiarly the pig for the village and suburban resident, rather than for the man of broad acres and plethoric corn cribs. The present demands of the pork market are for plenty of muscle, for meat nicely marbled with "streaks of fat and streaks of lean." The sophisticated "lard compounds" of stearine, cotton seed oil and other grease, with which the markats are flooded, have greatly reduced the price of really pure lard. People who raise and feed swine for market, therefore, prefer other breeds than those which "run to fat." But the fortunate man whose village or suburban premises are large enough to afford him a garden and place to keep a family cow and one or two pigs, is best suited with those of a small and quiet breed, which will render a full account of all the food supplied to them. If he can give his pig ever so limited a run on grass or clover during the early months, so much the better. This, with the refuse of the garden, the scraps from the house and, if need be, a moderate addition of middlings and oil meal, will carry the pig through the summer. Then it is shut up in a clean pen and, with a few weeks of judicious finishing on corn meal, will turn out a porker which would have delighted the soul of Elia.

The Small Yorkshires have become permanently established in the United States, and are bred here with great care and purity. The American Small Yorkshire Club, which is maintained to preserve the purity and promote the interests of the breed, is composed of intelligent and enterprising men.—*American Agriculturist.*

THE DAIRY.

A DAIRY EXPERT'S ADVICE.

Successful success in dairying means that the dairyman should be skilled and in love with his business, with a dairy cow fitted for the special work that is imposed upon her; barns, stable, all the appointments for use to the best advantage, all that the industry required abundant, and suitable food for this cow united for and obtainable at every season of the year. He should also have a definite knowledge of the needs of the market he patronizes, a business judgment and tact to take advantage of the situations and to profit by them, and there should be a combined effort on the part of each and every dairyman to promote dairy knowledge, making dairy instruction free, available and obtainable to all. Besides this, there should be a general feeling of never-let-go, all-push-together, to drive out and crush out and consign to everlasting hades all bogus ond spurious imitations of dairy products. All must also watch for and meet on equal ground this close competition that has found out the dairyman as well as the manufacturer. Experiment stations may point out remedies, but it is for individual dairymen to put them to the test and practice. The breed of cow the dairyman will keep he must decide for himself, but all are now agreed that she must be of the dairy type. Gov. Hoard's cow has come to be accepted by the world, and this type, whether Jersey, Holstein, Guernsey or scrub, is everywhere recognizable. By general consent dairymen have let go of the combination cow. I have heard more about the special dairy cow in the past year than in the 10 preceding. The beefy, blocky cow of elephantine proportions is doomed for the dairy.

The profits of carrying 500 lbs. of extra beef on a cow for six or eight years to sell at last for a cent per lb. has lost its charm. The dairyman is finding out that the ration that makes 1 lb. of beefy steer can readily be changed to make 1 lb. of butter or 2 lbs. of full creamed cheese. I admit that I have seen milk in copious measure drawn from the beef form, but the beef influence gains the mastery and the cow goes dry seven months in the year.

Let the feed be what it may, however, that alone cannot control the quality of the milk. The cow has an individuality of her own, a born milking habit, and the greater number of granddams possessing the milking traits the greater probability there is that this cow will possess like qualities. No man ever stimulated a cow into good productiveness unless she had this born quality of development to start with, and thousands of heifers that were born to make the best of cows have been ruined by bad care, cruel treatment and needless exposure. Every dairyman should raise his own cows as far as he can, and buy, if he must, wisely. For this reason he must be a judge of cows, a reader of cows, and in fact a cow phrenologist. Better care, feeding and handling of cows would carry with it greater success to the average dairyman. This idea of making a cow hardy should be eliminated from dairy wisdom. At best our cows are boarders and the larger part of the year they pay the better. Winter dairying is showing what the profitable care of cows means. Some men neglect their cows through thoughtlessness. One must remember, however, that whatever will administer to the comfort of the mother cow, quiet care, warmth, comfort, succulent, stimulating food, pure air, clean water and regularity of attendance, will help in a large measure toward success, for on this hangs the law and the profits, so far as the dairy cow is concerned. I have found that success in winter dairying invariably depends upon regularity in every particular.

Again, to succeed, dairymen must stop trying to fit excellence and quality into a cow's milk above her normal limit. The dictum must be accepted that the quality of a cow's milk is born with her, and no feed will make a Holstein give milk as rich as that of a Jersey. We may feed as we please, but beyond the limit we cannot force the cow to follow.—*John Gould, in Farm and Home.*

BUTTER MAKING IN A SMALL DAIRY.

A cool, airy room should be taken, especially for milk and butter, if it is to be had. If the milk is set in pans, which is the usual way where but few cows are kept and your room is fitted with shelves, let the pans be raised from them by strips of lath or something similar that the air may pass under the pans and hasten the cooling of the milk. A set frame is better. Take two boards about six inches wide and perhaps five feet long. These are for the uprights and should be placed as far apart as the desired length of shelves. It is better to have the shelves long rather than that being shorter any shelf shall be so high as to necessitate reaching above the head. On opposite edges and reaching from one to the other of the uprights nail strips of board three-fourths of an inch thick by two and a half or three inches wide, so that the pans shall rest upon the edges of these narrow boards and the air circulate all about them. When the frame is done let it be secured firmly to the floor.

The room should be kept as cool as possible in summer, while in winter some plan must be devised for warming it, or else the milk must be heated for a few minutes over hot water, before being set away, to hasten the rising of the cream and also to prevent its being bitter, which is sure to be the case if it has been kept at too low a temperature. The former is the better way. Thirty-six hours after the milk is set it should be skimmed, and if the very best quality of butter is desired, the cream churned at once. I do this with my small dairy of three cows, and churning thus, often feel butter-making less a task than the washing of my breakfast dishes.

It is claimed that sour cream will make a larger quantity of butter than the same amount of cream that is sweet. I have never tested it, being satisfied with invariably sweet butter. If the weather is very warm milk should not stand so long, and if it is found on attempting to skim any pan that clabber has began to form just under the cream so that the two can not be well separated, one of two things should be done. Either set the pan away again, letting it stand for a few hours longer, when it will have "wheyed off" and can then be readily skimmed, or else it should be taken off into a dish by itself and washed in a plentiful supply of cold water. Move it about with a spoon but do not stir or beat it and the sour milk will separate from the cream and settle to the bottom of the dish, and the cream can be skimmed from the top of the water and placed in the churn with the rest. If added to the other cream, without washing, flecks and kernels of curd will be found scattered through the butter. After it is churned it should be then thoroughly washed to rid it of butter-milk, and salted. I prefer using sifted salt instead of brine, and as regards the quantity one would better consult the tastes of a family, butter makers vary, using all the way from a quarter to an ounce and a quarter of salt to the pound of butter. The Americans are a salt-eating people and their butter is generally heavily salted. After thoroughly working in the salt so that there shall be no white streaks, set it away for a few hours or over night to allow it to harden and the salt to dissolve. Use no sugar and do not touch it with the hands. In the morning work and mould it, laying each lump as it comes from the mould into oiled paper which can be bought for that purpose. Fold the paper smoothly over each lump and lay them away in a clean jar or sweet tub. Too much cannot be said of the necessity of perfect cleanliness in the care of milk and butter and of scalding and airing all pans and utensils that are to come in contact with it. The fact should be emphasized, too, that the quality of the butter depends largely upon the cow or cows from which it is made. Test the cream and milk of each cow separately. This may be done by filling tumblers each with the milk from a different cow. When it has stood the proper length of time note which tumbler has the thickest and which the yellowest cream. Then keep the whole quantity of milk given by any one cow by itself for two days or a week. Measure the milk, churn the cream and weigh the butter. It can easily be determined which is the most profitable cow. I should be unwilling to keep one that would make less than a pound of butter per day, nor one whose cream required the use of a butter color, nor one upon whose cream I had to churn a half hour, either winter or summer.—*N. E. Farmer.*

POULTRY YARD.

SUMMER MANAGEMENT.

No day in midsummer should pass without attention to the wants of the growing birds. Though able to forage and help themselves to much of their keeping, a watchful eye to their condition of health, to their food and drink, and to their comfort during the hot days is necessary. When chickens pass the critical period of their lives and are depending on the generous and attentive breeder for their wants, there is no occasion for the close attention, selection of food, or the preparation of special mixtures to tempt the appetite to relish it; but knowing this, it is no excuse that they should be neglected altogether, for daily watchfulness may save the life or lives of many chickens from accidents or destruction from their natural enemies.

The practice of feeding a "square meal" to chickens one day and stinting them the next day is a common practice among some farmers and housekeepers. They really think that this is economy; the saving of a meal a day amounts to a good deal in a month. This is a great mistake. Young or old fowls require enough of nutritious food to do well and give flesh and eggs in return after supplying the needs of the system. There is no time in the life of a growing chicken that it can dispense with its regular meal except it is able to procure other kinds of food in its daily rambles, and when this can be done it is economy to limit the number of meals each day.

With the advance of the season and the production of new food, a change in the quality as well as the quantity is necessary. Chickens show a desire for change of food by refusing the "traditional messes," when they can procure other kinds by their own individual labor. Such notions are not always capricious, unless in cases of pampering and surfeiting. A healthy fowl will partake of all natural and suitable food, but shows preference for some kinds. The observant attendant will learn from his own choice of food and desire for change that the same is beneficial for the stock under his charge. The heavy diet of winter and early spring, especially the fattening and heating feeds, should be gradually lessened, and wheat and oats, with bran, take their place for days or weeks. In many ways the different kinds of grain can be mixed and prepared so they will be nourishing without fattening, and increase the egg production; they can be prepared in a way that the fowls will relish every morsel, and do them much good.

Remember that shade is a necessity in hot weather, and that young or old birds should have shelter from the scorching sun in midday. Do not feed too much soft feed during warm weather, and always mix each mess fresh so there will be none left to sour. Fresh water at least three times a day, and placed where it will keep cool; and if a piece of quicklime, the size of a hickory nut, is put in the drinking vessel once a day it will keep it fresh and healthy. While feeding the flock in the morning let your eyes rest a moment on each bird to see if the plumage is normal, if the wings droop, combs pale or congested, or if any of them stand about and refuse feed. Such timely attention may save one much trouble afterwards. It is certain that attention to business is the mains-pring of success.—*O. Poul. Jnl.*

CARE OF YOUNG TURKEYS.

Young turkeys are so tender, and so easily injured, that I find it best to remove them from the nest when only a few hours old. The mother hen is perhaps the most affectionate of all fowls, yet, owing to her size, she is extremely liable to crush her little ones, when moving around in the nest, in her anxiety to make them comfortable. For two days, then, I keep the young poults nestled down in a basket, snugly wrapped in soft, warm flannel, lifting them out for an airing now and then during the second day, in order to let them learn to use their clumsy little legs, and to offer them something to eat. Their food is prepared after the same old receipt which I and so many others (for so they have written to me) have round so good: "Into a shallow pan placed over the fire pour one pint of fresh sweet milk, and into this drop two eggs well beaten, stirring the mixture until it boils and assumes the consistency of jelly." If the brood is small, half this quantity should be prepared, as it should be made fresh every day. Little turkeys never have any appetite until two or three days old, and then egg custard will tempt them earlier than anything else. At first they peck at it in an indifferent sort of way, seeming to feel rather relieved when they miss their aim entirely, but as soon as they feel the need of anything to eat, having been hitherto nourished by the remainder of the yelk of the egg, then they begin to eat with avidity, and afterwards show much more life and animation.

When they are three or four days old, I put them back in the evening with the mother hen in a clean, large coop, on the short dry grass, and confine them for another day or so. At this age they need some sort of green food, as tender onion tops, lettuce or cabbage, cut small enough for them to swallow; and as they have learned to eat pretty well, I now season their custard with a pinch of black pepper, and after it has cooked, thicken it slightly with the soft crumb of egg bread. Part flour

bread would be good for them, but it is apt to stick in their mouths and worry them. Sweet milk should be offered them to drink once daily, being given in a shallow pan containing small stones or bits of wood—anything that will prevent the foolish little things from getting themselves wet. But even then do not leave the milk in their reach, as they never know when they have had enough.

When the polts are about five days old and have been with their mother one or two days, I let them out for a few hours' run, if the weather is warm and bright. The hen and her brood must be closely watched, though, for the little ones are very timid and do not yet know how to follow; sometimes, too, the mother is so elated at once more gaining her freedom that she will slip away and hide among tall weeds and bushes, and most probably lose some of her young brood. There is no end of dangers and pit-falls that beset the first appearance of little turkeys into the poultry yard; they are objects of great curiosity, and animosity too, sometimes, to the rest of its inmates who worry them no little walking after them, an old gobbler or rooster ocasionally treading upon one with his great clumsy feet, or killing it outright, either in wantonness or spite. Young turkeys are the most defenseless of all young fowls, and neither they nor their mother have the slightest instinct of avoiding danger. They haven't half as much sense as a young chicken.

At the first indication of fatigue, the young brood and the mother should at once be re-cooped, the length of time for their airing being increased each day, as the poults grow older and stronger, until, when two weeks old, they may be let out in the morning as soon as the dew has dried from the grass, and allowed to remain until near sundown. I am satisfied that many poults are lost from over-fatigue. The old way was to keep them confined in a close board pen until they were old enough to fly over the top, but very few ever did—the confinement killed them. Fresh air, sunshine, exercise and the opportunity to gather insects and to feed at will upon tender vegetation, are what constitute the life of a little turkey, and when deprived of these they will surely die. So whenever the weather permits, let them run out, if it be only for the half hour between showers, but until they are large enough to be out of danger from drowning, restrain their wanderings to a lot near the house, so as to be able to re-coop them should a hard shower threaten. And no matter how mild and fair the weather, always see that they come nights.

Five meals a day they should have at first, but after they are older and may be out most of the time, three meals are sufficient. When a month old, eggbread scalded in sweet milk may be subtsituted for custard and bread, and buttermilk or clabber for sweet milk.

The most satisfactory coop I have ever had for young turkeys was box-shaped, 2 by 3 feet, tall enough for the hen to stand upright, and while sufficiently close near the bottom to confine the youug poults, yet well ventilated under the eaves, over which the inclined board roof projects on every side to keep the rain from beating in. In the front and rear two of the slats extend out as handles, for the coop is light enough to be easily lifted to a clean spot every day. Short, thick grass makes the best of floors, but care must be taken to select ground that drains itself naturally, lest water should collect after a hard shower. Turkey hens give the keeper less trouble if they come off in pairs, for being company for one another they are less restless and wandering, and therefore take better care of their little ones. If early in the season, when the weather is still cool and inclement, fifteen poults each are sufficient; when hatched later on, they may have more. Should several broods go together the hens must each have a separate coop, and the young be divided among them at night, as they have a great fancy for crowding together and smothering each other.

My directions are thus minute because they are intended especially for beginners, who as yet have no experience of their own, and are therefore liable to make many disastrous mistakes. And while I do not say that my way is the very best, yet I do affirm from some years of experience that it is a remarkably successful one. I have reared entire broods without the loss of a single poult, and the little fellows make such rapid and vigorous growth that disease is a thing unknown. When fully matured, their general development, weight, symmetry of form, and beauty of plumage so nearly approach the standard of perfection that I am fully repaid for all my trouble. Indeed I find that while studying the nature if my pets and striving to make them comfortable and happy, the work of caring for them is often merged into a pleasure.—*Cor. Country Gentleman.*

THINGS THAT DON'T PAY.

Does it pay to stop hoeing in the mid-summer and let all the later growing weeds go to seed? I have adopted the plan of keeping my field clean until winter, and do not have to put in any more work than I should if the fields were seeded down every autumn with docks and annua grasses and purslane and a thousand other weeds to be hoed out another season. In other words, although I do more fall hoeing, I have less summer hoeing to do. Nearly all the potato fields that I see about the county are level full of weeds. The potatoes are hoed twice and then weeds can grow as they like.

Does it pay to let weeds and especially burdocks, sticktights and Canada thistles grow along the fences and about the sheds and barns and streets? You have to hoe the crops that comes from their seeds. They sow themselves in your Oats and Wheat, and deteriorate your crops. They depreciate the value of your land also—and they go into your character and above all the character of your children. I do not believe, it pays you to have foul corner of the sort. It usually is an easy matter to prevent them. It is not easy to work out the consequenccs.

Does it pay to have piles of brush and heaps of all sorts of other rubbish acout you? In the United States there are tens of thousands of acres lost to value by such shiftless methods. I know places of only a few acres where not less than half an acre is loss to profit. This is where the farmer fails to make ends meet. On these lost spots he could grow berries, grapes and vegetables enough to pay the interest on his mortgage.

Does it pay to buy trees, and plant in orchard, and then let the trees grow up to suckers till ruined? On the whole, could you conceive a more idiodic job than to buy Apple trees at fifteen cents each, costing planted about thirty cents each, let them occupy the ground for two years as a mere nuisance, give no fruit, and then die out? Yet orchards of this sort are planted every year, and they stand around as a shame to their owners.

Does it pay to hire men to pick apples and let them toss or drop them in the baskets; then pour them into piles, then once more pour them into barrels, with nails sticking in the sides, and dirt, or mould in the bottom? In the early winter you must begin to pick out rotten apples, and by spring you have thrown out half or more of all you have stored. You have said to your neighbors: "It is a bad year for apples to keep." Nonsense, years average a good deal alike, and if apples are picked in the way most apples are, they will rot any year and every year. Does it pay, do you think?

Does it pay to dig so many of your winter flowers for winter storage and lose two-thirds besides time and trouble, when you can buy small thrifty new plants of nurserymen in the spring for a trifle? I find it above all needful to save time and labor; and one point gained is to grow plants that make least trouble and let most of the tender ones freeze in winter. The honest florist deserves our patronage, especially when we gain by it.

So one may take a rational accounting of his methods, and reach some startling results. Evidently it does not pay to grow weeds at this season of the year. It as surely does not pay to lose the occupancy of some of our best land; and when crops are raised it does not pay to let them be wasted by carelessness. There are thousands of ways whereby we lose by trying too hard to save. —*Popular Gardening.*

ANNE ARUNDEL BERRY NOTES.

To begin with, the crop was a good one, large in yield, and remunerative to the growers. A crop as large a few years back would have completely "glutted" the market, but owing to the facilities offered by the different transportation companies for quick moving of freight, the use of refrigerator cars, and the opening up of heretofore unknown markets in the North and Northwest, the shipping of berries from Baltimore has attained most wonderful proportions. It is safe to say that the berry crop of Baltimore and Anne Arundel counties was worth at least half a million dollars to the growers. The Baltimore Sun estimates that at least ten thousand Bohemians and Poles left the city for the berryfields of Anne Arundel. The members of the "Wilna Farmers' Club," however, must not build their small fruit castles too high. The past season was an exception rather than the rule; a profit of $200 per acre may have been made in several instances by some of our more careful growers under favorable circumstances, but such instances are very rare. A profit of $50 per acre in field culture in this section would be nearer the average.

One remarkable feature connecting the berry crop the past season was the almost total absence of rust among the plants, that dreaded scourge of berry-growing.

Among the varieties doing best with us the past season were the Bubach No. 5, Crescent, Downing and Kentucky. For the first of the season was a little too wet and many soft berries of the Crescent it might be said that it over-did itself, since many small berries. The Charles Downing never did better and was eagerly sought after by the shippers who wanted a berry that would "stand up." Old Kentucky, though mentioned last and ripening last, held first place among them all, as during the two past seasons. Taken all in all the Kentucky Late combines more good qualities than any yet introduced in this section, and brings more profit to the growers. In shipping qualities excels all others; is a heavy yielder even on patches of four and five years standing; is late in blooming and consequently secure from late frosts; hardy and vigorous, able to crowd out weeds and grass in many instances and claim the whole soil for itself. It is perfection in shape and of excellent quality, surpassing all others for canning and preserving.

Among novelties possessing special el's Early, so favorably spoken of by the different experiment stations as well as private growers, with me it ripened three days earlier than Hoffman and outyielded it three to one. The Westbrook also, planted along side, was four days later ripening a crop of small imperfect sour berries that did not begin to come up to the representations of the disseminators. The Michel's Early is of good size, held well up from the ground, orange scarlet in color, and about as firm as the Crescent. The growth of vine is most vigorous and healthy, but inclined to mat too thickly in the rows. Hoffman, though early and fine, had four-fifths of its bloom cut off by the little green insect, so destructive to some varieties, while harmless to others. Our national entomologist should drive over some time and interview, investigate and teach us how to circumvent him. Blackberries and raspberries are yielding well and bringing good prices.

R. S. Cole.

A Prosperous State.—The Omaha *Bee* says Nebraska has bank deposits of $50,507,000, or $47 per capita, almost enough to pay all the farm mortgages in the State. The estimated yield of the crops for this year is greater than ever before. Omaha has grown to be the third-meat-packing centre in the country. The industry was unknown three years ago. The State produces fifty thousand pounds of butter and forty thousand pounds of beet sugar a day. There are 5,345 miles of railroad track in the State.

The American Farmer.

"O FORTUNATOS NIMIUM SI BONA NORINT AGRICOLAS." - - - - - *Virg.*

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A Reminder.

We call the attention of our subscribers who have not yet given attention to the little yellow memoranda of their indebtedness sent out in May and June last, that it would be a pleasure and convenience to us at this time to have them given consideration. The amounts in each case are quite small, but the total still unpaid makes quite a large sum to us, and the present is a good time for those in arrears to wipe them off. To our friends who have already remitted, our thanks are due and tendered.

THE GOVERNMENT CROP REPORT.

The July report of the Department of Agriculture makes the acreage, as compared with the breadth harvested last year, as follows: Corn, 108.3; potatoes, 102.3; tobacco, 102.6. Condition: Corn, 92.8; winter wheat, 96.2; spring wheat, 94.1; rye, 93.9; oats, 87.6; barley, 90.9; potatoes, 95.3; tobacco, 91.1. The heavy increase in corn acreage is more apparent than real. The present return makes the acreage slightly less than 78,000,000 acres, or somewhat smaller than the area actually planted last year.

The crop is late in all sections, on account of drouth and unfavorable conditions at the time of planting and cool weather during May, but June was warm with abundant moisture, and the crop was coming forward rapidly on July 1.

The condition of winter wheat is returned practically the same as in June. The crop is harvested except in its more Northern habitat, with a condition the highest reported since 1879 with one exception. The condition of spring wheat improved during June, the advance being in Minnesota and the Dakotas, where the month was exceptionally favorable. State averages are: Wisconsin, 77; Minnesota, 93; Iowa, 96; Nebraska, 96; North Dakota, 98; South Dakota, 97; Washington, 98.

Oats have improved during the month, but the general average is the lowest reported since 1879, except in 1887 and last year, when a July condition of 81.6 was followed by a practical failure of the crop.

The first return of potatoes shows a condition higher than the average of recent years, while that of tobacco is higher than in any year since 1886. The fruit prospect is flattering.

A cable dispatch from the European agent indicates a heavy deficiency in the European rye crop.

The July returns show some improvement in the condition of cotton during June. The general average for the whole breadth has advanced three points, standing at 88.6. The slight improvement noted has been general. The crop is universally late. In the Atlantic and Eastern Gulf States especially, the plant is small and backward. From Mississippi westward, the plant, while somewhat backward, is of good color, making generally vigorous growth. There is some complaint of lack of labor. The outlook in Texas is especially good.

TEOSINTE (EUCHLŒNA LUXURIANS).

The experiment station of Kansas reports the following result of their experiments with this wonderful forage plant:

The plant, which is a distant relative of Indian corn, has been grown on the College farm for three successive seasons. It is a native of the tropics and does not mature seed in this latitude, nor even reach the blooming stage, but it grows with unrivalled luxuriance until harvested or killed by frost, producing a large amount of most excellent feed. The plant reaches here a height of from six to nine feet, and grows in thick bunches produced by its wonderful tillering, which perhaps is unequaled by any other agricultural plant. It produces from twelve to fifty or more full-sized stalks from each seed, causing the rows to spread till they reach each other, and the whole patch towards the end of the season becoming an impenetrable thicket. The leaves resemble those of corn, but are longer and narrower, and they are closely set on tha stalks nearly to the ground. It resists drouth well, as may be judged by a yield of 23 tons green forage per acre last season. Both the green and the dry fodder is greatly relished by stock, there being no waste at all. The following are the yields per acre of green forage secured at the different trials at this station:

1888.....17 tons per acre.
1889.....31¾ " " "
1890.....23 " " "

Averageof 3 years.23.9 tons per acre.

The severe frost of September 12, 1890, killed all the plants, which began to dry up and waste; on September 25 what remained was cut and shocked, giving a yield of dry fodder of 4.7 tons per acre.

Each year a portion of the crop has been cut in August, with a view to learn the value of the second growth. This, however, is evidently not the proper treatment. The cut plants make but a very feeble second growth, not nearly equal in amount to that made during the same period by the uncut plants. The proper management of this crop is to let it stand undisturbed till fall and then cut and dry it in time to save it from injury by frost. Owing to the thick stalks and heavy foliage it is difficult to cure. We have not as yet produced sufficient of it to try its value for ensilage, but there seems to be no reason why it should not answer for that purpose. It would be valuable for full feed in seasons when the pastures are short. The main drawback to its general culture is the cost of the seed, which is quoted at $2 a pound. It does not mature seed in this latitude, but Bulletin No. 22 of the Louisana Station reports that it matured seed in that State. We plant it in rows three feet apart, and thin the plants to one foot apart in the row. At this rate one pound of seed will plant an acre.

JULY PLANTED STRAWBERRIES.

In July '90, we planted a bed of strawberries on a piece of ground that had grown a crop of early peas. After we got the peas picked, we plowed the ground and sowed bone on it at the rate of 200 pounds to the acre, then harrowed and marked off the rows three feet apart. The second week in July we planted the plants, 18 inches apart in the rows. They started to grow almost as soon as they were planted. Whenever it was necessary, went through with cultivator. Sometime in September we gave them a hoeing, the last week in November we gave them a mulching of straw. April 1st, removed the mulch; about April 15th, gave them a dressing of nitrate of soda at the rate of four hundred pounds to the acre, cultivating them twice afterwards. I wish the readers of THE AMERICAN FARMER could have seen the patch at picking time; we picked twenty berries that filled a quart box and weighed 15½ ounces. We are so pleased with this method that we shall try it again this year. The berries spoken of are Cumberland Triumph. C. M. WAGNER.

Baltimore Co.

CRAB GRASS, CLOVER, TIMOTHY, AS FOOD STUFFS.—The following table puts into a single view the values of these three well-known grasses:

	Dry Matter.	Protein..	Fat.....	Nit. Free Extr...	Fibre.....
Timothy.....	34.63	8.52	2.01	51.27	32.87
Md. Red Clover..	93.98	14.63	2.82	43.88	29.97
Crab Grass.....	——	8.38	2.42	36.59	27.50

The nutritive ratio of timothy is as 1 to 10.96; of clover, as 1 to 5.63; of crab grass, 1 to 8.4. That is, the proteins (flesh and muscle-forming constituents) are to carbo-hydrates and fat, the heat producers, in that ratio.

MELILOTUS, OR CHILIAN CLOVER.

Eli Shepherd writes *Home and Farm* that he has had so many questions from various States asking about the plant, incidently mentioned in a previous article, that he anwers all in one paper.

The plant mentioned is the Melilotus, or White Clover of Chili. In talk of the scientist, the plant is described thus:

"Flowers in a raceme on spike, small; corolla falling after flowering; pod roundish and small like an akene, hardly opening, containing only one or two seeds; annuals or biennials, with sweet-scented foliage; leaflets three toothed."

Though a member of the humble clover family this plant does not carry a lowly head half hidden in grasses or wrapped in its own foliage. The plant often reaches a height of six or ten feet. The whole growth has a most light and graceful appearance. The stem, be it the usual height of two, three or four feet, or the fuller reach of six or ten feet, throws out branches gracefully proportionate to its height. Each little twig of these branches is tipped with a staff of tiny white blossoms. Each little staff of flowers is like a little white candle blaze shedding out delicate perfume instead of lucency.

The plant is lightly leafed, so lightly leafed that the whole has a most airy, filmy, lace-like appearance. The growth loves to strike its roots in lime soil. Some of the handsomest plants that I have ever seen have been those that have sprung up on the side of the white lime roads that net the dark soiled, rich prairies of Alabama. These plants sprang from the ditches or washes on the roadside straigh out of the "bald-head." Now for the uses of this beautiful plant, for it is one of man's most servitors.

First: As a florist's addition to bouquets of bright flowers, it has few equals. This clover, that grows "divinely tall and most divinely fair," is a fitting companion for the richest of exotics. The delicious fragrancy of its foliage fits well with the perfume of richer and rarer growths. The odor of the white clover of Chili is like odor of manilla grass, is much like the luscious odor of heliotrope. Though the plant flourishes best and does its best work in lime-lands, it will make a very pretty growth in a sand-land flower garden, planted about in a bed of plants of lower growth it makes over the bed of brighter, lowlier blooms a light and graceful veil of palest green and white. The blossoms of the melilotus when out retain their freshness quite a while; the pretty three-toothed foliage, however, wilts easily.

Second. As a growth for an apiarist's garden the melilotus is invaluable. Of all the honey available over the flowery prairies of Alabama, the bees love best this plant. When the white fields are in full bloom they are noisy with the hum of honey-gatherers. There the bees swing to and fro on a slim stemmed blossom that swings itself six feet above earth, sucking out honey that is clear as just loosed champaigne, sweet as all the odors of summer. The honey gathered from this plant

is most exquisite. It is white as lilly-petals, clear as crystal. It has a taste of vanilla, vanilla mingled with a hint of burnt almonds. There is not a honey made from any flower that can be compared with this delicately flavored crystal sweetness.

As a forage growth it is unequaled, this white Chilian clover. It will bear several cuttings in season. It makes a nourishing and finely perfumed hay. When fed to cows it imparts to the products of the dairy a delicate and pleasant flavor. It is a splendid covering for pasture lands. Many a poor negro renter whose corncrib and fodder rack are sadly bare of farinaceous furnishings finds this growth, now riotous over our prairies, a godsend to him for his hungry stock. Some of these renters have been known to "make a crop off it." Some renters hardly able to feed a bushel of corn to his hard-worked animals in early spring when corn is distressingly high priced. Even when the plant reaches its greatest height its fibres are always nourishing, never coarse.

The planters of Hale county, Ala., value the plant most for its fertilizing properties. In several years time a single sowing of this crop, that sowing left to repeat itself will bring youth and renewed richness to the most worn piece of lime land. Its method of accomplishing the work of fertilization is this: The great strong roots of this giant clover strike into the lime soil and split and loosen the hard soil as they make their way through it. In two years time the plant has reached its full development, the root has reached its fullest growth.

Then, like every world benefactor having done all the good that lies in its power, it dies. All the soil beneath its dying beauty is left thoroughly netted with decaying vegetable matter. Meanwhile, in that second year, the blossom year for the melilotus, the flower has sowed its own seed. New and vigorous roots are making and breaking up the worn and stiffened lands, each root industriously digging its own grave, for these roots, too, must come to their death in two years time, so goes on interminably the work of enriching and rejuvenating.

I know of one many-acred place in this county where the planter sows year by year new fields of melilotus, choosing for these patches places that are worn white by much yielding of cotton and corn, with little help from man's hand in the way of fertilization. These plats of white clover the planter leaves in nature's hands for four, perhaps six, years, if the land is greatly worn. In that time the soil has greatly regained almost all, if not all, of its virgin freshness. Its color has changed from dusty-white to rich soot-blackness. Its style has changed from a rough, lumpy surface hard to plow, hard to work with, into soil easily manipulated and loamy.

As to covering with new richness, the "white bald-head" that creeps out on the lime soil stretches that would prove, I presume, the work of many years. I have heard that planters scatter seed over such unsightly outcroppings just before a rainfall; the rain causes the seed to lodge in some niche where it may germinate and the work of enrichment may begin. But it is a hard job to give to nature and one of her most delicate workers, this bringing of a bald white rock into loamy, wealth-producing richness, and it is well to remember that nature is a slow though sure workman. Certain it is that when the seed has once found a lodging place on the rock it produces there its most perfect growth; the handsomest plants of the melilotus that I have ever seen have sprung from just such white knolls in mid-field or on equally white road-sides.

Since the worth of melilotus is beginning to be known throughout the country many seed gatherers take to the lying-out-fields in fall time. These seed the negroes sell at country and village stores. These seed the negroes name in their quaint dialect, "Lucinda seed," a sort of jargon for Lucerne, for in the early history of the melilotus in this country the plant was often confused in name with that other forage plant, another warmly welcome emigrant, the Lucerne. The village, where most of these seed are bought in, and where, therefore, the seed are easiest procurable is Cedarville, Hale county, Ala.

The great roots of the melilotus bring not only fertilization to the land but make in themselves an unique and admirable system of tile drainage. The roots, some of them as large as a man's wrist, have struck far into the earth; each root and rootlet, when the plant above is dead and itself dying, makes a little cistern. These millions of little cisterns hold or loose the moisture according to the demands of the crops [illegible]. So the planter, in having several acres of melilotus will find that he has for a part of his land good tile drainage, good fertilization, for his cows and horses the finest possible pasturage, (it only needs that he take off the grazing stock in time to allow the plant to sow seed for another crop) and for his bees the best possible pasturage procurable the wide world over.

I have never heard of the plant being serviceable in this line, but I doubt not it would be very valuable for the manufacture of a perfume, light, delicate, sweet as "all the odors of Araby." Now for the practical knowledge that the farmer will need concering the planting and caring for of such a paying crop. The season to plant in this section where it flourishes like a natural growth of the country, is in early spring, in February. The latitude of this section, the melilotus' land of adoption, is 30° 30'. The land must be plowed as for oats, the seed sown broadcast, then harrowed.

It is possible to get a good stand by planting one peck of seed to the acre; the seed are very small and fine; but to secure a good cutting of hay, before leaving the later growth to sow the seed for the next year, the planter should sow from one-half bushel of seed to one bushel per acre. It is a plant that after the first sowing manages to care for and resow itself. The worth of the plant has just begun to make itself thoroughly felt here in the land of its adoption.

It was not many years before the war when the small packages of seed from Chili was brought to the late Dr. Henry Tutwiler, of Greene Springs High School. As I said in the former article, Dr. Tutwiler, from his knowledge of the plant itself and of the soil of its native country, understood that the plant would not reach its finest development in a sandy soil. Dr. Tutwiler sent some of the seed to his relative, the late Mr. Samuel Studwick, of Arcola Homestead, Hale county; in the lime soil of that place the plant found congenial surroundings, and from that little planting has come a blessing invaluable to the prairie planter.

THE MARYLAND WEATHER BUREAU.

This Bureau has been organized under the joint auspices of the Johns Hopkins University, the Maryland Agricultural College and the U. S. Weather Bureau. Its work will be similar to that of other like organizations, and the same benefits are anticipated. The natural and other advantages, however, which the States of Maryland and Delaware offer to render the local bureau of practical benefit to their inhabitants are unexcelled, and correspondingly good results should be obtained. The largest and most important arm of the Atlantic in the United States bisects the territory embraced, and important commercial interests can therefore be benefitted by the establishment of signal stations at such points on the Bay and its tributaries as can readily be communicated with, for the purpose of giving to captains of vessels information as to the forecasts for wind, weather and temperature. The climate varies result of the influence of the Chesapeake Bay and the Ocean upon the eastern section, and the presence of the Appalachian System in Western Maryland; and consequently presents interesting features for study, the results of which should be of value.

Owing to the difference in climate, the varieties of soil formation and the length of coast line, the agricultural and commercial interests of the States are many, and the range of usefulness of a local weather bureau correspondingly wide. An important departure will be the determination and comparison of the several geological and soil formations as regards their variations in temperature and moisture under varying climatic conditions, the kind of crops adaptable to the different formations, and the possible methods and extent of change that can be made by the use of fertilizers and manures in suiting the land to particnlar crops. Investigation in this department is in progress.

The various places of observation and report, in all sections of the States, will be made points for the dissemination of meteorological information, such as frost warnings, crop bulletins, and monthly and annual summaries, comparisons and deductions. Twelve observers have sent their initial reports, and the number will be increased as rapidly as possible.

Monthly reeports will be issued, and it is also proposed to print and circulate throughout Maryland and Delaware, weekly bulletins of crop conditions and prospects, made up from information received from crop reporters in all sections of the two States.

As the efficiency of the State Service will depend largely upon the closeness of co-operation with the U. S. Weather Bureau, it was considered advisable to move the Baltimore office of the National Bureau to the Johns Hopkins University. The quarters occupied are in the Physical Laboratory, and the roof of that building is used for the exposure of instruments.

The officers of the Bureau are Professor William B. Clark, of the Johns Hopkins University, *Director*; Professor Milton Whitney, of the Maryland Agricultural College, *Secretary and Treasurer*; and Dr. C. A. Cronk, of the U. S. Weather Bureau, *Meteorologist in charge.*

HOME DEPARTMENT.

You are all doubtless busy. I for one have been and to make the word busy doubly sure, my cook has let me know that the weather was too hot for her to cook, when she had no need to do so, and over a week ago left me to hold the fort as best I could. Well, I would rather cook than to be bothered by some of these darkies. We have a very nice bakery not far off, and I sent in time for a box of *Mason's Standard* crackers. I make *beautiful* Maryland Biscuit. By the way, in mixing the dough we use milk (sweet) instead water, if we can afford it, or as much milk as I can spare. The milk makes them bake so much nicer, besides increasing their then good qualities. I want to make some Blackberry Cordial next week by berries in a stone jar, place in a kettle of water on the stove; when thoroughly scalded, take from the stove, press the juice and strain; to every pint of juice add one pound of loaf sugar, half ounce cloves, half ounce allspice, half ounce cinnamon, half ounce nutmeg. The spices must be pulverized and put in a muslin bag, then boil the juice again with the spices and sugar until thoroughly done. When cool add half pint best brandy to each quart of cordial. Bottle and put away for use. One can add more brandy if they wish. This cordial is excellent for bowel troubles.

Barkis has "gone North" to take a holiday. Likely as not, he will call at the "American Farmer's" office. So if you see a "six footer" with a gray "foretop" just make your best bow and say, how are you Mr. Barkis.

Try Again.

TO MAKE A HOME OUT OF A HOUSEHOLD.

The time will come—has almost come now—when sewing shall be just as certain to be eliminated from the household occupations as the old-time weaving. Nothing can be more destructive in its effect on the higher life of the family than for the mother and mistress of the household to exhaust every energy in a constant attention to sewing, to the exclusion of her reading, her walks, her personal companionship with her children and her friends. There is now almost nothing in the way of clothing for men, women and

children that cannot be purchased ready made. Not always, to be sure, to the best advantage. Many articles are actually of better quality and of lower price than the same articles could be if the material were purchased and the making done; while again, on many others, the purchase of material and individual manufacture would be cheaper and better in the end. It depends. Also with house linen of all kinds, for table and bed, the furnishing houses offer every grade of quality and price.

So far as sewing must be done in the house, economy is consulted by having a reliable seamstress in the house and her machine come for a week or a month, as may be, two or three times a year, and crowd the sewing that must be done in the house into that time. Hawthorne remarks that there is nothing more beautiful than to see a woman sewing, and that she is never at home more with her own heart than when so occupied; but Hawthorne was a poet, and viewed life through a pleasing mist of fancy. The practical and prosaic truth is that there is no possible or conceivable occupation which so wears on a woman's nerves and energy as that of the endless stitching to which many women sacrifice their lives and the life of the family. Not only, indeed, in the necessary and essential, but also in unnecessary and unessential: in needless decorations; in endless tucks and frills and embroideries which are neither useful nor beautiful.

A moderate amount of household exercise is healthful and agreeable, but the bending over sewing is quite the reverse.

It is time the modern women, with the new life on her, eliminated herself from the old tradition of unceasing household service.—*Ex.*

FASTENING THE THREAD.

Most women are situated in circumstances which should make them philosophers. The analogies of physical life, and the mechanical operations of the daily routine in every household display constantly to the unseen phenomena of mind and soul, should teach us many a lesson in ethics. Some keen-witted ones among the sex are full of these small bits of wisdom, which are suggested to them by the homely happenings of every day. It is better than a "summer school" to be under the tuition of one of these quaint analogists for a few months. One of them is Aunt Huldah, a dweller in an old-fashioned mansion among the New England hills.

"I thought I wouldn't throw away a bit of butter that I put in the back pantry in a jar, nearly two months ago, and found yesterday by chance. I've moved that jar a dozen times, but I supposed it was empty. Well, I washed the butter all over, and salted it, and put in a mite of saltpetre, and made cake with it this morning. 'Don't taste of it'—no, don't. I've tasted and that's enough. Well, it's a good lesson. I knew't wasn't just right, but I thought it would shorten the cake, and the sugar and spice I calc'lated would cover up the taste, but they don't. We think we can get along with letting in a little sin, we're so good-tempered or industrious or something else; but it's no good. There's a bad taste all through us, on account of the sin we've let in.

One day she left the gate open, and some cows got in and trampled down her corn. This, too, was not without its lesson to her. In telling of the occurrence that evening under the maple trees which shaded her pleasant little porch, she said: "It's happened before—and I've thought I would remember. I knew I had left the gate open, and I thought I would go back in a few minutes and shut it. My hands were full then. But Mrs. Tibbetts came in, and there was one thing and another—and so my corn is pretty much spoilt. It's just as it was with my boy—the one I told you about that I haven't heard from for ten years now. I knew that going with that Dibble boy was bad for him. I knew it was leaving the gate open for the enemy to come in. But I neglected it, till I could see a change coming over him—it was just as plain as the change in my corn now. Then I shut the gate and forbade him going with the Dibble boy, but the mischief was done. My sweet, little innocent child was never the same again. My! how many of us are leaving gates open that oughter be shut!"

But Aunt Auldah was never in such a furor of philosophy as on a certain evening when she attended a church sociable. "It beats all," she exclaimed, "how folks don't fasten the thread when they sew!" There was Mrs. Judge Lyman, she or Susie—maybe 'twas Susie—she's a heedless piece—had sewed some ruffling in her sleeves, and both of them some out during the evening, because the thread at the end wasn't fastened. Then Mrs. Tredwell began to button her new cloak, and the very first button came right off. I knew well enough it was because she hadn't fastened the thread, when she sewed it on. Why, 'most all the troubles we have with our clothes coming to pieces is because we don't fasten the thread good and tight when we get through. And it's just so throughout life. We ain't thorough, and that makes trouble for all of us. Now there's Squire Benton and his hired man. They're going to law, I understand, and the trouble seems to be that when the bargain was made between them, it wasn't plain and square. One thought it was one way, and the other thought it was another. They didn't fasten the thread. I never sew but I think of this thing, but to-night I had it come home to me more than I ever did before. That ruffling now, coming out of Mrs. Lyman's sleeves! How shiftless it did look!—now there was Henry Tibbetts. He inquired up, as he supposed, for his journey out West, and then he never took any more thought about it. He might have known that the station agent in a little country place wouldn't be likely to know everything—and, lo! the first he knew he was on the fast express for St. Louis instead of Chicago. I don't remember just where it was, but I know it cost him ten dollars or more just because he didn't make thorough work of his inquiries—he didn't fasten the thread. I tell you, if we'd only attend to just that one thing—just to leaving every piece of work we do fast and strong—be sure it is done thoroughly, it would be enough in itself to make a man successful. Why—there's men and men that I know—right in this town—that think if they just live a smooth kind of life it's well enough—no need of attending church or giving any heed to religion—I tell you they ain't fastening the thread. I think of it every day—as I said, and now I shall think of it more than ever. But you'll say I've gone sort of crazy about this business. Well, it does seem queer to me that folks don't see and mind these likenesses—they might learn so much if they did!"

But everybody has not Aunt Huldah's keen eye to see the "likenesses."—*Ladies' Home Journal.*

HOURS OF EASE.

A CONUNDRUM SOCIAL.

Not long ago we had a successful Conundrum Social, and I am impelled to tell how we managed it. Notice was given like this:

"All are cordially invited to attend a social at Mrs. Winston's next Friday evening. It is a conundrum. Come and guess it."

Slips of paper were prepared, half having written on them various conundrums, the other half bearing answers, in style as follows:

QUERY.
Why is a cat's tail like the earth?

ANSWER.
Because it is fur to the end.

These were put into two hats, the queries in one and the answers in the other. Each person present was requested to select one slip from each hat and not to show either, until after the answers had all been given. When everything was ready and the company seated the questions were read. As this was done every one who wished, except the holder of the right answer, endeavored to give the correct reply. If all failed the answer was then read by the person holding it. If this person failed to discover that he held the answer he was taken to one end of the room and made to stand on a low stool until some other person could be found to take his place. The successful guesser of the most conundrums was presented with a diploma tied with blue ribbon, fancifully and wittily prepared, entitling him to the degree of G. G. (Good Guesser.) The conundrums given were gathered from various sources, and some were well known, but of course not all. An umpire, or marker, was appointed to see that full credit was always given in case of a successful guess.—*Minneapolis Journal.*

TWO DEBTS.

When Ashbel Dean died, and his earthly debits and credits were looked into, it was discovered that the credit page was nearly as spotless as the sheet that had covered Ashbel's still form, while mortgages for the full value of the farm were recorded on the other side. Ashbel had been considered forehanded. His neighbors said he "speculated West," and were astonished when his death revealed the fact that he had sacrificed all in an endeavor to save some shreds of his financial reputation.

None were more surprised than his own family. This included the widow, and Amanda and Israel, twins, twenty years old. They were crushed. They shrank from it as from the presence of death—the first one—in the family. For days they dared not speak of it, but it was always in their thoughts. At last the widow roused her energies, and summoned her children.

"We can save the farm," she said. "'Manda, you can keep the district school; Israel and I will carry on the farm. We must all stand together."

For twenty years they were possessed of that one thought, urged by the one motive—to pay the debt.

They stood together twenty years, and at the end of that time they owed no man anything.

The mother looked scarcely a day older. The work of directing had kept her faculties fresh and vigorous. But son and daughter had passed from anticipative youth into dulled middle age. The debt, unscrupulous and avaricious, had left them no enjoyment. It had robbed them of life's most desirable part.

When Amanda was twenty she was called pretty. Gatherings had been incomplete without her. After that, she never attended another. The attentions of young men, which came unsolicited, were refused. Now she had become thin and sallow. She knew she could hope for no return of love's pleasures. If a thought of marriage crowded itself upon her, she shook it off as unwelcome. She could give up her school now, and devote her time to home, to her mother and brother.

And Israel was free. He took a long breath and stood up straight, easing his galled shoulders of the burden they had just cast off. Life looked pleasant suddenly. He would make some needed improvements on the place. The house should have a coat of paint. He stood in the sunshine, and looked through the June foliage of the maples, thought the seed-pods looked like the legs of so many elfin painters dangling there painting the sky. Then he laughed at himself, and he said he must be getting young and frisky.

When he was twenty he had thought to be married. Now, at forty, he thought of it again. When he stopped his visits to Harriet Downer, she understood why. She had had no "company," he told himself, since then, and his heart gave a great bound at the thought. Why should he not?

One day he came to his mother and sister, and said, bluntly, "I am going to be married to Harriet Downer."

There was silence for a long moment; then his mother said coldly, "We know it."

By the tone and attitude, Israel understood that his mother and sistea would not welcome the woman he meant to marry. He understood that they thought that the tie of constant effort of the past twenty years as binding as wedlock, and did not wish it broken.

But once after that Israel spoke of

his marriage. "I am to marry Harriet to-morrow. Shall you be there?"

And his mother answered, "No."

But Israel would keep his vows to Harriet.

The twenty years struggle had cultivated in him the dogged resolution inherited from his mother.

He married Harriet and after a week brought her home. No one appeared to meet them.

"Mother," he called as he went through the house. In two remote rooms he found his mother and sister.

"Harriet is out there," said he.

"And we are here; we shall stay here," said his mother.

Israel looked about, dazed. He remembered afterwards that he saw a stove, with pots and pans and dishes, and in the other room a bed, a table and chairs. The two women had made all preparations for living by themselves.

And this was the bride's home-coming!

Yet the married two lived a happy life together. Israel felt keenly the mental misery his wife must endure, and strove to alleviate it by every kindly attention in his power, and she understood his motive, and resolutely hid all traces of pain. Life was for each as the other made it.

There was no communication between the two parts of the house, and no messages passed, no visits were exchanged.

Thus for two years, when a baby was born. Then one day Harriet said to Israel, "Take the baby, and go to your mother." He understood and taking the child in his arms, went and knocked at the door.

"Who is it?" said his mother's voice.

"Your son and grandson," he repled.

There was a slight noise and a pause within. Then Amanda said, "We are too busy to see you.

He returned and laid the baby to his wife. She did not need to question him by word or eye.

Two years more went by. One morning Israel called his wife to come down into the garden. He had some vegetable wonder to show her.

"But I can't take the baby out in the dew," she objected.

"Leave him where he is. He'll do no harm for five minutes."

Then toddle, toddle away—the little feet knew the path that was forbidden them—straight on through the unused passageway to the door at the end. He pushed and shuffled babily against it.

"What's that queer noise at the door, 'Manda?"

"Sounds like a dog," said Amanda.

But when the door opened in tottered a baby, triumphant, happy, eager. Every line of his baby face, every curl, had been graven in the widow's heart for forty years, and it suddenly opened to show her the likeness.

"It's Israel over again!" she cried. And in a moment she was on the floor caressing, kissing, the little one.

Blighted Amanda leaned on her broom bewildered, looking at this strange happening. And Israel and Harriet, hastening after the child, stood in the doorway witnessing the first step to reconciliaton.

"Come to mamma, Israel," said Harriet to the child. He looked at her, laughing, over his grandmother's shoulder.

"Tum to mamma," he repeated, taking a step and pulling at her finger.

The widow hesitated but a moment between mother's love and hard, selfish pride.

"I will," said she firmly. "And, 'Manda, put down your broom and come too."

Then, led by the little truant, she came toward Israel and Harriet.

"My children!" she cried.—*Harper's Weekly.*

HINTS AND HELPS.

SELECTED RECIPES.

POTATO BALLS are very nice for breakfast. Boil the potatoes, and while still warm mash until there are no lumps left, then mix butter, pepper, salt, a little chopped parsley, and one or more raw eggs; beat these thoroughly together, then mould in balls, dip in beaten eggs, and then in flour, and fry in butter.

CRAB SALAD.—Mix the crab meat with a French dressing. Serve with a mayonnaise dressing and lettuce. Use hard shelled crabs, canned or fresh. Wash the lettuce, and let stand in cold water till nearly ready for use. Take out and dry on a towel, or put into a bag and hang up for a few minutes. An old-fashioned twine bag is good for this, or a bag made of scrim or coarse lace. This last method does not bruise the lettuce. Garnish with grated yolk and sliced white of an egg boiled for 20 minutes; also with capers.

SWISS CREAM.—Have ready a cake tin, measuring two and a half inches deep. In this ring bake some rich sponge cake mixture—the ordinary sponge cake batter, with a quarter pound of butter to four eggs, is rich enough—and when done enough turn out very carefully into a nice china or glass dish; brush the cake ring over with vanilla glace, and, when quite cold, fill in the centre with a high mound of stiffly whipped cream, flavored very delicately with vanilla. Ornament the top of the cream with candied cherries, cut in tiny pieces and arrange round the base border of small, fresh, green leaves.

CREAM FRITTERS.—Sift a pint and a half of flour, two teaspoonfuls of baking powder, and a half teaspoonful of salt together.

Beat up the yelks of four eggs, pour in the centre of the flour, and add milk enough to make a batter, rather thick.

Melt equal quantities of butter and lard—in all about the size of a hickory nut, and pour into the batter, and then add the whipped whites of the eggs.

Drop in plenty of smoking hot fat.

Drain on paper, sift over them fine sugar and serve.

SANDWICHES.—To make wonderfully appetizing sandwiches proceed in this way: Take equal quantities of the breast of a cold boiled chicken and of cold boiled tongue. Chop them very fine; so fine, in fact, that you cannot distinguish the separate particles. Add a good large half-teaspoonful of celery-salt, a pinch of cayenne pepper, and four tablespoonfuls of Mayonnaise dressing. This quantity of condiments will be enough to season the breast of one large chicken, and an equal quantity of tongue. When this is perfectly cold spread some thin slices of bread with butter, and then with this mixture. Do not prepare them till you are about ready to serve them. If you wish to take sandwiches for a lunch when travelling, be careful not to make the dressing quite so moist as you would if they are to be eaten at home. The better the way, if you do not object to the trouble, is to put the salad filling in a small glass jar, and spread the sandwiches as you need them.

MAYONNAISE DRESSING.—Mix the yolk of one egg, half teaspoonful mustard, one quarter teaspoonful salt and a few grains of cayenne together. Add oil, drop by drop, untill very thick; thin with a little lemon juice or vinegar; then add more oil, using in all about one cup of oil, one tablespoonful vinegar and one tablespoonful lemon juice.

Two eggs are enough for a pint of oil, indeed the oil will take no more.

For a meat or fish salad there is no form of dressing so good as the mayonnaise.

Mayonnaise dressing curdles in making, because there is too much oil in it, or the ingredients are too warm, or too much time has been spent in the making. Guard against these faults; but if it does curdle at the outset add a half-tablespoonful of vinegar. If it curdles at the end, there is no help for it but to begin all over again.

Some add cream to make the dressing lighter color, but beating it a good deal has the same effect. Beat in the cream with a dover egg-beater.

USES FOR LEMONS.

A writer in *Housekeepers' Weekly* gives some ways of preparing lemons to advantage in hot weather. In the heat of summer, when they decay rapidly, I have learned several ways of preparing lemons so that at any time a cooling drink may be procured, quite as palatable as lemonade. The first, called lemon syrup, is made as follows:

To six pounds of white sugar add the grated rinds of twelve large lemons, without cutting them. Stir the sugar and grated lemon-peel into half a gallon of water, and place it over a slow fire until it is dissolved thoroughly. Then increase the heat until it boils enough to thicken, taking the scum off as it arises. After it thickens, add the juice of twelve lemons, carefully leaving out the pulp and seed. Boil all together for ten minutes, and when cool bottle and keep in a dark cellar. Use in the proportion of one-third lemon syrup to two-thirds water.

Another simple drink is made by dropping a quantity of fresh lemon peel into wide mouthed bottles of good vinegar. After it has been prepared for some time it is quite refreshing on a hot day if a small portion is gradually stirred into a glass of ice-water.

The best recipe I have ever used for lemon pudding is as follows: One lemon to one egg, one cup of sugar, one cup of grated bread crumbs, stirred into a soft mixture with the addition of a full table-spoonful of milk. This quantity is sufficient to fill one pie plate covered with pastry. As it requires no butter it is a very economical pudding, as well as a very excellent one.

OUR BOYS AND GIRLS.

McALLISTER.

"Mi-a-ow-w-w," said McAllister, in a doleful minor key. He looked despairingly around, and repeated his former assertion, then sat down on the hard sidewalk as flat as he could, which was very flat, for he was a very fat, square-built little kitten; but presently perceiving a Skye terrier advancing, McAllister hurriedly rose and traveled on again as fast as his astonishingly short yellow legs would carry him.

Early that morning he had been forcibly ejected from the house of Mrs. Finnigan. She had kept him to amuse her children, and it was only lately that he had graduated from the basket where he had dwelt with his mother and other relations. For several days Mrs. Finnigan had endured his perpetual attendance upon her somewhat massive pedal extremities, but this particular morning she had discovered him skirmishing around among the edibles destined for breakfast, where he had been put by one of the mischievous young Finnigans, and remarked in an energetic tone: "Shure, I can't be having that little divil round any longer. When he was too little to walk he heled kape the children quiet when I [illegible] but now he rins over the place like a sar-r-pint, and I can't endoor it no longer at all," and she forthwith laid violent hands upon the innocent "little divil" and "fired him out," as she classically expressed it.

Such, in brief, was McAllister's history, and he had been wandering over the city all day long, and had undergone such trials and persecutions as he could not contemplate with any degree of equanimity. Not being very strong on the aforesaid short yellow legs, he was at present a very tired and discouraged kitten, but still he pushed perseveringly onward. Now, everybody knows that perseverance deserves reward, and McAllister's was even then travelling towards him in the person of little Polly Jenkins, aged 10 years. Only that morning her father, a busy man, had said, "My daughter, you are now old enough to have a regular allowance of pocket money, and hereafter shall have 50 cents on the last day of every week, which I believe is Saturday." Then patting her hastily on the head, he said, "Run away, child, I'm busy," and immediately forgot her very existence. He would doubtless never have thought of making her an allowance at all, but Polly's aunt (the poor child's mother had lately died) had suggested it to him.

Well, as has been said before, Polly was walking along the sidewalk, pondering on the question how she should spend the fortune into which she had lately come, when suddenly something soft and warm

made a futile effort to ascend her back by means of her dress, in which its claws were firmly fastened. It gave her quite a start, but glancing down in the direction of the something, she beheld—nothing more harmless than our youthful friend McAllister. Her startled feeling gave place to one akin to rapture. Stooping, she seized upon the fat little yellow ball of fur, and bore him away bodily, bestowing upon him a large number of loving little pats, inexpressibly comforting to the little wanderer. "My, my," said McAllister to himself, "there never was such an angel before, in this whole world of Boston," and he made an ineffectual attempt to rub his nose against the angel's. Polly heard what he said, but supposed he was only purring, and cuddled him up closer, which caused him to "purr" more than ever.

Reaching home, Polly found her father at his books and papers, and she immediately laid McAllister down before him. Mr. Jenkins eyed McAllister somewhat sternly, but McAllister, in his innocent lightheartedness, returned the eyeing so boldly, not to say brazenly, that the man of business felt himself at a disadvantage, and transferred his attention to Polly, who was unreservedly offering to relinquish all claim to her allowance, if she might keep McAllister. "And I'm sure," she wound up, or rather ran down, breathlessly, "that such a thing as he is couldn't eat more than in a week than 50 cents would pay for, and if you please, may I keep him?" "So you are willing," said her father, "to give up your allowance for the sake of that little yellow thing," thus he contemptuously designated McAllister, "why, Polly, I thought you were very much pleased with the idea of an allowance." "Yes, sir," said Polly, honestly, her lips quivering a little in spite of all she could do, for after all her plans it was hard to give it up. "I was pleased with it," said she, "but this little kitten hasn't any home, and if I turn him out on the street again he'll be killed by some dog or a horrid boy. And besides," she said, despairingly, "it's so lonesome here since—since mother died, and he means to understand and try to comfort me and then he'd be here watching for me when I came home from school every day, and he,"—"There, there Polly, my dear," interrupted her father, the brightness of his glasses dimmed by something—perhaps the dampness in the air, "keep your kitten and your allowance too. I have no earthly use for it. Run away now child, I'm busy." "Strange, strange," said he to himself as Polly went slowly away with the precious little McAllister hugged tightly to her breast, "that I have never before noticed what a good girl Polly is. I've never once thought that she has not been having good times like other girls. Well! well! I'll do better by the child hereafter," and he sighed as he turned to his books again. And he was as good as his word, his little daughter knew no more sad days. McAllister was retained in the Jenkins family, where he lived a life of credit and propriety and reached a green old age, and "if he's not gone he lives there still." And little Polly Jenkins rejoices to this day.

SUNDAY READING.

HEZEKIAH, THE GOOD KING.

"Now it is in mine heart to make a covenant with the Lord God of Israel, that his fierce wrath may turn away from us."—2 Chron. xxix., 10.

Hezekiah, the thirteenth king of Judah, the son of Ahaz, ascended the throne at the age of twenty-five, and reigned twenty-nine years, B. C. 726—698. Among all the kings of Judah Hezekiah stands pre-eminent, and his reign is the culminating point of interest in their history. "There was after him none like him among the kings of Judah, nor any that was before." Immediately upon his ascension he began an extensive and thorough reformation. His first act was to purge, repair, and reopen with splendid sacrifices the Temple, which had been despoiled and neglected during the idolatrous reign of his father. He utterly destroyed all the instruments of image-worship, not excepting even that sacred relic the brazen serpent of the wilderness, which had been abused to purposes of superstition. His was the first successful attempt to collect the sacred books of his country. By his orders a large part of the Proverbs of Solomon, and, according to Jewish tradition, the prophecies of Isaiah, the Books of Ecclesiastes, and the Canticles were weitten out and preserved. He revived the observance of the Passover, of which no celebration had been recorded since the time of Joshua; and it was commemorated by two weeks of rejoicing. He broke off the servitude to the Assyrian power, and raised the standard of independence. And though this brought upon his kingdom an invasion, the interposition of the Lord drove off the offenders, and gave the emancipated kingdom peace.

THOUGHTS FOR THE CLASS.

The reformation wrought under Hezekiah affords a true pattern of of what all reformation ought to be, whether national or personal. In studying it the student must take into consideration at least the whole of the twenty-ninth chapter.

1. The king first undertook, as far as in him lay, to reform. He opened again the Temple and repaired the doors. He gathered together the priests and Levites, and directed them to consecrate themselves and purify the Temple. He exhorted them to repentance by reciting before them the sins of the nation: and acting on his directions they carried out all the uncleanness of the Temple, and made thorough work of the cleaning. It was a great national and sacred act of house-cleaning. This cleaning preceded all religious ceremonies.

The first thing for the sinner to do is to depart from evil. The prodigal must turn his back on both the harlots and the swine. Paul must cease to persecute the Church. Peter must turn with true grief from his denials, and his swearing and cursing to the Lord whom he has denied. Zaccheus must cease to be an oppressor of his brethren, and promise to restore fourfold all that he has acquired by injustice and wrong, before the Lord declares that salvation has come to his house. Repentance precedes faith. Abandonment of sin is the first step in holiness. Tears, visions, prayers, ecstasies are in vain without it. See John the Baptist's preaching to the crowd who asked him, What shall we do to be saved? (Luke, ch. iii). No man can rest on the direction of Paul to the jailer, "Believe on the Lord Jesus Christ," while he is continuing in known sin.

2. Next came the great act of atonement. Seven bullocks, seven rams, seven lambs, seven he-goats, were brought for sin offerings. So "they made reconciliation with their blood upon the altar to make an atonement for all Israel." Repentance is not enough. It is not enough to cease to do evil. The soul calls out for some satisfaction for the sins that are past. If not, what means the system of sacrifices so elaborately devised in the Old Testament? If not, what means the long and elaborrate system of sacrifices that has characterized every people from the beginning of history to the present day? If not, what means the self-torture of the Hindus, what the human sacrifices of the ancient Druids, what the penances of the Middle Ages? These are the offerings of conscious guilt to the conscience, which calls out against the soul for some satisfaction, some penalty. Philosophy may break down in the attempt to explain the necessity for an atonement, but the fact that the universal soul of man calls out for an atonement, a call that is satisfied only by the life and death of Christ, is as certain as any fact in history. The students of heathen life and the echoes of heathen literature testify to this universal sense of need of an atonement as well as the Scriptures. The repentant must come to the sin-offering that has been made for him if he would consummate his reconciliation and find peace with his own conscience and with his God.

3. Then followed the service of praise. "Levites in the house of the Lord with cymbals, psalteries, with harps, according to the commandment of David; and the song of the Lord began with the trumpets and the instrumeuts ordained by David the king. And all the congregation worshiped, and the singers sang, and the trumpeters sounded." What joy and thanksgiving follows the reconciliation of the repentant soul with itself and its God! Then comes the music and dancing, and the fatted calf and the ring and the best robe. This is the prophecy of that new song which the redeemed are finally to sing when they meet around the throne. Alas! how our religion stops with the 11th verse, just where the appointd Sunday-school lesson unfortunately stops, at mere repentance and attempted reformation, without trust in the sacrifice that has been made for sin, and the atonement that there is in that sacrifice. How often too, the religious experience, going one step further, stops with that atonement, with the cross of Christ, with verse 24, without going on to the song of glory, to the crown that Christ has laid up for those who accept the cross.

Finally came the great act of consecration. "Now ye have consecrated yourselves to the Lord, come near and bring sacrifices and thank-offerings; and the consecrated things were six hundred oxen, and three thousand sheep." True consecration follows true praise. It is, indeed, part of the true praise. First, repentance, ceasing to do evil; next faith in atoning sacrifice that has made reconciliation and has blotted out the past; then, thanksgiving to God for his goodness and mercy that has opened the way to life; and, finally, consecration to him of all that we have and are, in a spirit of love and joy—this is the religion of the Lord Jesus Christ.—*Lyman Abbot in Christian Union.*

ADVERTISING IN THE AMERICAN FARMER.

A. N. Brown writes to the publisher: "My father was much pleased with the results of the advertisement (of scarlet clover seed). He told me he received nine orders in a single day from it."

BRIEF NEWS SUMMARY.

GENERAL.—The treasury department reports the immigrations, since 1820, number over fifteen and a half millions—A. L. Snowden of Pennsylvania was appointed minister to Greece—A railroad collision occurred at Ravenna, O., between a passenger and freight train, and about 30 passengers were killed and many injured, most of the victims being from Corning, N. Y.—A grand reunion of the army of the Potomac took place at Buffalo—Ex-Treasurer Bardsley, of the city of Philadelphia, was sentenced to 15 years' imprisonment and $237,530 fine.—The census bureau reports our mineral products to exceed those of any other nation—The S. S. Cox monument was unveiled by the letter carriers in New York—The lake in the Arizona desert continues to rise—The weather bureau was formaly transferred to the department of agriculture July 1st—The war department has abolished the three great military divisions, and all the minor departments will report direct to the general commanding—President Harrison appointed the full number of cadets at large, including a grandson of General Sherman.

FOREIGN.—Emperor William and the Empress of Germany are in England, where great popular ovations and royal hospitalities have greeted them—Chinese advices describe the attacks on foreign missionaries and the beheading of many of the rioters—The marriage of Princess Louise to Prince Aribert of Anhalt was celebrated with great pomp at St. George's chapel, Windsor.

MARYLAND.—The Farmers' Alliance of Anne Arundel county resolved that it would indorse only actual Alliance men for places on the county ticket, and that no names would be presented for any of the local offices except for State Senator, House of Delegates and county commissioners—Jacob Wells, a well-known farmer, of Howard county, died, aged 75 years—William S. Pepper, proprietor of Pepper's Hotel, Baltimore, died in his 71st year. He was a native of Virginia, but had resided in Baltimore over 20 years—Between 5 p. m. Tuesday July 7th and 8.30 p. m. Wednesday 8th, the rain fall in Baltimore measured 2.99 inches. Many streets were greatly damaged by the heavy rain. Americus Dawson, died Sunday night at his home near Dawsonville, Montgomery county, in his 74th year. He was one of the largest landowners and farmers in the county.

BALTIMORE MARKETS.—July 14.

BREADSTUFFS.

Flour—Quiet. We quote Western Winter Wheat Super, $3 50a3 75; do. Extra, 3 85a4 50; do. Family, 4 65a5 00; High Grade Family, 5 75; City Mills Super, 3 60a3 75; Rio Extra, 5 35a5 60.

Wheat—Southern firm. Fultz selling at 93a 1 03, and longberry at 95a1 04. Western steady, No. 2 red spot selling at 1 00, 95½ cents for August delivery and 95 cents for September.

Corn—Southern steady to firm. White selling at 75a76 cents, and yellow 73a75 cents. Western moderatively active, mixed spot selling at 66½ cents, August 62 cents; September 61 cents.

Oats—Steady. We quote ungraded Southern and Pennsylvania 45a48½ cents, Western white 48a48½ cents, do. mixed 40a47½ cents, No. 2 white 48a48½ cents, and No. 2 mixed 47a47½ cents.

Rye—Quiet. Choice Western 70 cents, good

to prime, 63a68 cents, and common to fair 55a60 cents per bushel.

Hay and Straw—Firm. Quotations were: Choice $13 50a14 50; good to prime 12 50a13 50; fair to good mixed 11 50a12 50; common and inferior 8 50a9 00. Clover Hay 9a10 00. Off grades 8 50a9 50 on track. The market for straw was quiet, with light offering and firm prices. The stocks have been well cleaned up. Rye in carloads 17 00a19 00 for large bales in sheaves, 12 00 a13 50 for blocks. Wheat blocks 8 00a9 00, and Oat blocks 10 50a11 00 per ton. At Scales.—Hay—Timothy, 12 00a15 00; Clover Hay 9 00a11 00 per ton. Straw—Wheat 9 00, Rye 13 00a15 00, Oats 9 00 per ton. Ear Corn—3 50a4 00 per bbl.

Mill Feed—The market for Mill Feed was firmer, with a good inquiry for light bran and better figures for City Mills Middlings. Western bran, light, 12a13 lbs., 17 00a18 00; do. medium, 14a16 lbs., 15 00 a 16 00; heavy, over 16 lbs. 14 00 and 15 00, and Middlings 15 00a18 00, all on track, with spring brand about $1 00 under these figures. City Mills Middlings $19 00 per ton delivered.

Provisions—Strong. We quote sugar-pickled shoulders 6½ cents; smoked sugar-cured shoulders 7½ cents; sugar-cured breasts 8½ cents; canvased and uncanvased hams, small averages, 11¾a12 cents; large averages 11¼a 11½ cents per lb. Mess pork, old, 12 00, and do. new, 13 00 per bbl. Lard, and best refined, pure 7¾ cents per lb.

Butter.—Firm at quotations Fancy creamery jobbing at 19 cents, to choice creamery 16a17 cents per lb. Imitation creamery 16a17 cents per lb. Fancy ladle-packed 14a15 cents, prime to choice do. 13a14 cents per lb. Store-packed 11a12 cents, and creamery Prints 19a20 cents per lb.

Cheese.—In fair demand. We quote: Fancy full cream, New York State, 58 to 60 lbs. 9¼a9½ cents; choice full cream 9a9¼ cts; New York. bats, flats, 30 to 35 lbs size, 9¼a9¾ cents per lb. 20 lbs. size, 9¾a10 cents per lb.

Eggs.—Good quality scarce. We quote: For extra quality candled 17 cents, fair quality 16½ cents. Held stock dull and neglected.

Poultry—In demand. Large Spring Chickens 19 cents per lb. small do. to medium 17a18 cents per lb. old Hens 12 cents per lb. and old Roosters 25a30 cents apiece. Old Ducks 8a9 cents per lb. Spring Ducks 12a14 cents per lb, 2.75a$4.50 per dozen.

Tobacco—Maryland—Receipts rather light and demand good except very common. We quote: inferior and frosted $1a$1.50; sound common 2a3; good do. $1a5; middling 6a8; good to fine red $9a11; fancy $12a13; upper country $3a10; ground leaves $1a9.

Wool—Dull. We quote Unwashed extra choice and light 22a24c; average lots 21a23; do. merino 16a18; tub washed, fair to choice 30a32; pulled 25a26. Burry wool from 2a10c. less per lb., according to quality of burrs. All black 3 to 5c. per lb. less.

LIVE STOCK.

Beef Cattle—In fair demand. Prices ranged: Very best on sale 5¼a5½c.; that generally rated first quality, 4¼a5c.; Medium or good fair quality 3¾a4c.; ordinary thin steers, oxen and cows 2¼a2¾c; Extreme range of prices 2½a5½c.; Most of the sales were from 2¾to5¼c.

Sheep.—Active, being received at 3a4¾cts. per lb. gross and lamb, 5a6¾ cts. per lb. gross.

Swine—The demand is good and has taken up pretty much all the offerings. Hogs.—We quote at 6¾a7¾ cents net, a few near-by Hogs selling at 6¾a7 cents, and Western Hogs at 7a7¼ cents per lb. net.

FOR RENT.

The fine farm in the Monocacy Valley, near Adamstown, Frederick Co., Md., containing about 390 acres in the highest state of cultivation; dwelling and all necessary out-buildings. The farm at present is occupied by Mr. Jas. H. Smith, and adjoins Mr. Geo. W. Padget. Rent, $1,000 per annum. Apply to Alex. Yearley & Son, agents, 24 E. Lexington St, Baltimore, Md.

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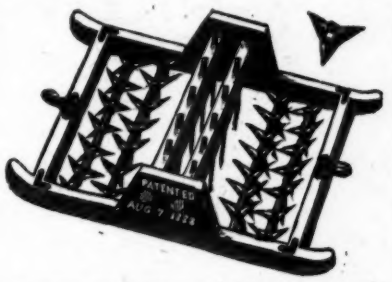

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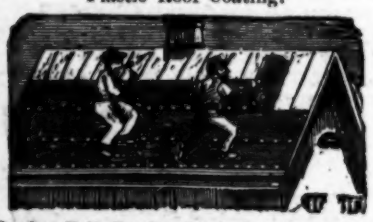

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